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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/721,315 | 11/25/2003 | Reza Miremadi | MIREMADI | 7081 |
| 7590 04/13/2004 | | | | |
| Kirschstein, Ottinger, Israel & Schiffmiller, P.C. 489 Fifth Avenue New York, NY 10017-6105 | | | | |
| EXAMINER | | | | |
| ANDREA, BRIAN K | | | | |
| ART UNIT | | PAPER NUMBER | | |
| 3662 | | | | |

DATE MAILED: 04/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/721,315

Applicant(s)

MIREMADI, REZA

Examiner

Brian K Andrea

Art Unit

3662

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 5-8 (1-4 have been cancelled by pre-amendment) is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 5-7 is/are rejected.
- 7) ☒ Claim(s) 8 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,984,794 to Miremadi (hereinafter, "Miremadi") in view of U.S. Patent No. 6,429,941 to Kamon et al. (hereinafter, "Kamon").

With regard to claim 5, Miremadi teaches a system for electro-optically determining motion parameters of a moving target, comprising: a stationary starting platform 12 for supporting the target prior to target movement; an assembly including a light emitting diode 18 (see figure 2) operative for directing outgoing light to the target for reflection therefrom (see column 3, line 36), and a photodiode 22 (see figure 2) having a field of view and operative for detecting incoming light reflected from the target and for generating electrical receive pulses (see column 3, lines 37-38), the assembly defining a reference plane located in and extending along the field of view, the platform being spaced at a known, predetermined spacing from the reference plane (see the setup in figure 1 – shows a stationary platform, spaced a known distance from light sensors (see column 7, lines 34-35) which have a field of view that create a reference plane); means for determining the distance to the target at the reference plane (see column 6, line 59 to column 7, line 2); and, means for ascertaining a direction of the target relative to the

reference plane as a function of the known spacing and calculated distance (see column 7, lines 34-36).

Miremadi teaches the calculation of distance from the number of pixels on the detector that are illuminated by light reflected off of the target. Miremadi does not teach the use of transmitted pulsed light which is used for calculating the difference in arrival times of the transmit and receive pulses which then yields the distance from the sensor to the target in the reference plane (known as "time-of-flight distance measurement"). However, time-of-flight distance measurement is well known in the art. Kamon teaches a distance measurement apparatus which uses a time-of-flight technique. It would have been obvious to modify Miremadi's method of distance measurement to use a time-of-flight technique such as the one taught by Kamon as a mere alternative method for calculating the distance from the sensor to the target because after making this modification, the apparatus of Miremadi would function in the same manner.

With regard to claim 6, Miremadi teaches that the ascertaining means includes ascertaining a velocity of the target by consideration of the time taken for a given dimension of the target to pass through the field of view (see column 7, lines 36-38). Even after a modification of the Miremadi apparatus with the distance measurement technique taught by Kamon (see discussion with regard to claim 5), this calculation would be possible simply by using the same sensor used in the distance measurement, as is already taught by Miremadi.

With regard to claim 7, Miremadi teaches the use of a reflector 14 or 16 on the target for reflecting light to the photodiode.

Allowable Subject Matter

3. Claim 8 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent No. 4,150,825 to Wilson teaches the use of a distance measurement technique for determining the trajectory of a golf ball in flight.

U.S. Patent No. 4,136,387 to Sullivan et al. teaches the use of three sensors for determining the spin, direction, and velocity of a golf ball using a triangulation technique.

U.S. Patent Nos. 6,252,655 to Tanaka and 5,852,491 to Kato have been cited because they teach, in combination with Kamon, the type of distance measurement apparatus that is used in the present invention.

All other references have been cited to show the current state of the art of golf ball flight parameter calculation.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian K Andrea whose telephone number is (703) 605-4245. The examiner can normally be reached on M-F 7:00-3:30.

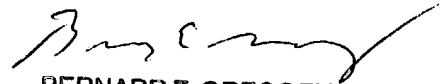
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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Tarcza can be reached on (703) 306-4171. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

BKA

BKA
07 April 2004



BERNARD E. GREGORY
PRIMARY EXAMINER

A.U. 3662